

COASTAL CONSERVANCY

Staff Recommendation
June 15, 2017

SOUTH JACOBY CREEK RESTORATION

Project No. 16-009-01
Project Manager: Joel Gerwein

RECOMMENDED ACTION: Authorization to disburse up to \$540,074 to the City of Arcata to restore and enhance floodplain wetlands adjacent to Jacoby Creek in Arcata, Humboldt County, and adoption of findings under the California Environmental Quality Act.

LOCATION: Jacoby Creek, Arcata, Humboldt County

PROGRAM CATEGORY: Integrated Coastal and Marine Resources Protection

EXHIBITS

- Exhibit 1: [Project Location](#)
 - Exhibit 2: [Initial Study, Mitigated Negative Declaration, including Mitigation, Monitoring and Reporting Plan](#)
 - Exhibit 3: [Restoration Design](#)
 - Exhibit 4: [Site photographs](#)
 - Exhibit 5: [Project Letters](#)
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RESOLUTION AND FINDINGS:

Staff recommends that the State Coastal Conservancy adopt the following resolution pursuant to Section 31220 of the Public Resources Code:

“The State Coastal Conservancy hereby authorizes the disbursement of up to three hundred seventy five thousand and seventy four dollars (\$375,074) of U.S. Fish and Wildlife Service (USFWS) grant funds and up to one hundred sixty five thousand dollars (\$165,000) of Conservancy funds, for a total disbursement not to exceed five hundred forty thousand seventy four dollars (\$540,074) to the City of Arcata (City) for the restoration and enhancement of floodplain wetlands adjacent to Jacoby Creek, within the City of Arcata in Humboldt County (Exhibit 1).

This authorization is subject to the following conditions:

1. Prior to disbursement of any funds for construction of the project, the City shall submit for the review and approval of the Executive Officer:
 - a. A work plan, schedule, budget and the names of any contractors to be retained for project construction.
 - b. Evidence that all permits and approvals necessary for the project have been obtained.
 - c. Evidence that all necessary funds for implementation of the project have been obtained.
 - d. A plan for the installation of a sign acknowledging Conservancy and USFWS funding.
2. In implementing the project the City shall ensure compliance with:
 - a. All applicable mitigation measures as well as monitoring and reporting requirements for the project that are identified in the Initial Study-Mitigated Negative Declaration (“IS/MND”) and the Mitigation Monitoring and Reporting Plan (“MMRP”), attached to the accompanying staff recommendation as Exhibit 2, or in any permits, approvals or additional environmental documents required for the project.
 - b. All requirements of the USFWS grant, including, but not limited to, compliance with the National Environmental Policy Act.”

Staff further recommends that the Conservancy adopt the following findings:

“Based on the accompanying staff report and attached exhibits, the State Coastal Conservancy hereby finds that:

1. The proposed project is consistent with the current Project Selection Criteria and Guidelines.
2. The proposed project is consistent with the purposes and objectives of Chapter 5.5 of Division 21 of the Public Resources Code, regarding integrated coastal and marine resources protection projects.
3. The Conservancy has independently reviewed and considered the information contained in the attached IS/MND, public comment to the IS/MND, and the Mitigation Monitoring and Reporting Program developed to mitigate potentially significant environmental effects, pursuant to its responsibilities under the California Environmental Quality Act (“CEQA”). The IS/MND identifies potentially significant effects from implementation of the project in the areas of biological resources, hazards/hazardous materials, historic resources and hydrology/water quality. The Conservancy finds that the project as designed avoids, reduces or mitigates the potentially significant environmental effects to a less-than-significant level, and that there is no substantial evidence based on the record as a whole that the project will have a significant effect on the environment, as defined in 14 Cal. Code Regulations Section 15382.”

PROJECT SUMMARY:

Staff recommends the Conservancy authorize disbursement of up to \$375,074 awarded to the Conservancy by the United States Fish and Wildlife Service (USFWS) National Coastal Wetlands Conservation (NCWC) grant program, and up to \$165,000 of Conservancy funds, to the City of Arcata (City) for implementation of the South Jacoby Creek Restoration Project (project). The project will restore an approximately 29-acre complex of wetlands associated with Jacoby Creek near Humboldt Bay in Humboldt County, California (Exhibit 1). Humboldt Bay has lost 90% of its historic tidelands to agriculture, residential, commercial, or industrial uses. The restoration of wetlands in the project area is critical for the recovery of multiple listed species and species of concern. The restored wetlands will provide valuable habitat for resident and migrating songbirds, waterfowl, and shorebirds; and vital off-channel rearing and winter refuge habitat for anadromous fish, including federally threatened Coho salmon and steelhead trout.

Historical diking of river and tidal channels in the lower portions of Jacoby Creek began in the late 1800's. The diking severed connection to the floodplain, in which the project area is located, and led to the loss of historical tidal marshes on both sides of Jacoby Creek. Diking also eliminated access to off-channel and estuarine habitats for aquatic species. Grading of adjacent lands for agriculture led to the loss of complex wetlands and riparian areas that supported migratory and resident fish and wildlife. The proposed project will restore floodplain wetlands and riparian habitat.

Diking also interrupted historic fluvial geomorphic processes, cutting off the sediment supply from Jacoby Creek to its floodplain. Sediment that once was deposited by the creek on its floodplain adjacent to the channel, is now deposited in the creek channel itself. This has led to severe aggradation of the channel. At the same time, floodplain wetlands adjacent to the creek subsided. The result is a perched creek system with reduced flow capacity. Because of the loss of channel capacity, Jacoby Creek overtops its dikes during high flow events several times a year. Overflow events trap juvenile, threatened salmonids and other aquatic species into adjacent pasturelands on the south side of Jacoby Creek. The dikes and perched condition of the creek prevent overtopping flows from returning to Jacoby Creek. Drainage from the pasturelands is possible only through two small diameter culverts, which are in poor condition. Thus, fish entrained into the pasture are often unable to return to the creek and perish when the pastures eventually dry up. The project will restore floodplain connectivity, restore sediment transport processes and allow fish to move easily between the channel and adjacent floodplain wetlands.

The Coho salmon population that resides in the project area is part of the Southern Oregon Northern Coastal California Evolutionary Significant Unit (SONCC ESU), an imperiled population that is critical to the evolutionary legacy of the species. This population is at high risk of extinction, with a rate of population decline exceeding ten percent.¹ Coho salmon, once abundant across the rivers and estuaries of western North America, were listed as threatened

¹ Recovery Plan for the Southern Oregon Northern California Coast Evolutionarily Significant Unit of Coho Salmon. Public Review Draft. NOAA, National Marine Fisheries Services, Southwest Regional Office, Arcata, CA. January 2012

under the Endangered Species Act in 1997. While the Humboldt Bay watershed contains some of the most valuable salmon streams in California, many of these tributary streams suffer degraded in-stream habitat quality and complexity, especially in the low-gradient, coastal reaches that are important for salmonids. Passage barriers such as culverts and tide gates, along with riparian vegetation removal and sedimentation, have reduced the extent and quality of tidal freshwater and estuarine Coho rearing habitat. These impaired watershed conditions make the restoration of Jacoby Creek wetlands especially vital for the recovery of this species. The disconnection of the floodplain currently results in fish strandings after overbank flooding, and the floodplain in and adjacent to the project area lacks riparian vegetation, and floodplain marshes, reducing its habitat value.

However, some habitat value remains in Jacoby Creek as evidenced by continuing documentation of spawning and juveniles. Restoration of the project area will make a valuable contribution to species recovery by addressing most of the impairments to salmonid use of this area. The project will also benefit federally listed steelhead trout and Chinook salmon, state listed longfin smelt, and coastal cutthroat trout, a California Species of Special Concern. In addition, state-listed bald eagles may benefit from restored shallow water foraging habitat, and Peregrine falcons may benefit from floodplain wetlands foraging habitat. Seasonal wetlands in the project area will be managed to provide short grass foraging habitat for Aleutian cackling geese.

The project will demonstrate that wetland restoration can provide simultaneous benefits to wildlife and farmers. It is hoped that by demonstrating that wetland restoration does not have to come at the expense of coastal agriculture on diked historic tidal wetlands, the project will catalyze additional wetland restoration in the region. The project vicinity suffers from frequent, long duration flooding due to the loss of sediment transport in the degraded channel. As discussed above, historic diking disconnected the channel from the floodplain, resulting in sediment deposition in the channel, and a loss of flood conveyance capacity. As a result, even small rainfall events result in long duration flooding of the vicinity. This flooding reduces the productivity of pasturelands. The project will restore floodplain connectivity, resulting in renewed sediment transport and flood conveyance. While the project will restore floodplain wetlands connected to the channel and the project area itself will no longer be regularly grazed, the duration of flooding of adjacent pasturelands in the project vicinity will be reduced. The reduced flooding of adjacent pasturelands will benefit the agricultural operations in the vicinity.

Specific project elements are shown in Exhibit 3, and include:

- *Restore floodplain connectivity via Jacoby Creek dike breach:* The project will breach the existing dike on the south side of Jacoby Creek at a location approximately 1,200 feet upstream of the US-101 crossing of Jacoby Creek. The breach location is at the upper end of the Jacoby Creek estuary. Fish and other aquatic species will be able to move between the creek channel and the floodplain wetland complex via the dike breach.
- *Construct Marsh Channel Network:* The project will excavate an approximately 2.21-acre marsh channel network. This network will consist of a primary marsh channel that follows a dendritic branching pattern into secondary marsh channels. The marsh network will be permanently flooded and will be subject to tidal influence for several days per month. Approximately 1.5 acres will consist of permanently flooded, tidally-influenced channels and shallowly flooded marsh plain. Permanent flooding of these channels will occur

because of a series of natural grade controls in Jacoby Creek that will limit drainage out of the project area for elevations less than 7.0 feet.

- Marsh Planting Islands: The project will construct planting islands within the larger wetland complex. Planting islands will be frequently flooded, and portions will be subject to tidal influence.
- Construct guide berm to prevent fish stranding and protect agriculture and infrastructure: The project will construct a 1.66-acre low-height guide berm along the lower (western) end of the project area. The guide berm will capture flow from Jacoby Creek that overtops channel banks in the upstream portions of the project area. Flow will be redirected through the Jacoby Creek breach, thus allowing entrained aquatic species to return to Jacoby Creek. The guide berm will be 1.66 acres, requiring the conversion of 0.61 acres of wetlands to uplands. 0.61 acres of wetland creation will occur on-site to compensate for this permanent impact.
- Construct Seasonal Shallow Depressional Wetlands (Ponds 1&2): The project will excavate two shallow depressional wetlands with a total area of 1.97 acres, which will provide winter refugia for juvenile endangered salmonids. These wetlands will be seasonally flooded by Jacoby Creek overflow, direct precipitation, and groundwater seepage. They will be isolated from tidal influence and will hold water at elevation 10.3 feet (NAVD88) after storm events.
- Construct Freshwater Capture Channel Network: The project will excavate ~2,000 linear feet of freshwater capture channels. The channels will intercept overflow waters from Jacoby Creek and redirect the flows back into Jacoby Creek through the seasonal wetlands and estuarine areas. The channel network will consist of a series of reaches with pools and riffles inset into a floodplain that is approximately 1-foot below existing elevation with widths varying from 5-30 feet. Channel depths will range from 0.5 feet to 3 feet below the floodplain bench. The inset floodplain will create areas to store overflow waters and allow water to infiltrate and recharge down-slope wetlands. The floodplains will be planted with riparian shrubs to enhance wetland complexity and provide habitat for birds and insects, and forage areas for aquatic species when flooded. The design of the freshwater capture channels is based on analogs of avulsion channels typically found on alluvial fans.
- Riparian Planting: The project will expand the width of the Jacoby Creek riparian corridor by planting approximately 3.7 acres of alders and willows.

The project includes work by the Humboldt Baykeeper and Humboldt State University that will facilitate public stewardship and environmental education. The project will include educational signage and programs. Students will visit the wetlands and learn about their ecology and their role in protecting water quality and wildlife, and the public will participate in volunteer stewardship.

The City of Arcata is qualified to undertake the proposed project, as evidenced by its successes managing past and ongoing restoration projects and restored lands, including: the USFWS/Conservancy-funded restoration projects at McDaniel Slough and nearby Arcata Baylands, the Arcata Marsh and Wildlife Sanctuary (AMWS), the Arcata Community Forest, and the City's many riparian areas, wetlands and designated open spaces.

Site Description: The project area is a City-owned historic tideland that is currently an actively grazed seasonal wetland (cattle pasture) dominated by annual grasses, located between U.S. Highway 101 and Old Arcata Road (Exhibit 4). An approximately 100 feet wide band of riparian habitat dominated by willows and alders adjoins Jacoby Creek adjacent to the project area. The project area is located within the Arcata Baylands, a 217-acre parcel purchased with conservation grants and maintained by the City for the purposes of habitat restoration and enhancement. Portions of the Arcata Baylands have been restored with past Conservancy and USFWS grants, and the project will build on those successes. Deed restrictions protect these wetlands from development, and the City will continue to manage the area for fish and wildlife habitat. The project area is part of a contiguous block of over 1,300 acres of local-, state-, and federally-protected lands adjacent to the northern edge of Humboldt Bay, including the nearby USFWS Humboldt Bay National Wildlife Refuge, Jacoby Creek Land Trust holdings, the City-owned Arcata Baylands and AMWS, and the California Department of Fish and Wildlife-owned Mad River Slough Wildlife Area.

Project History: The City acquired the Arcata Baylands property in which the project is located in December 2004 with \$750,000 in Conservancy funding and an additional \$750,000 in other funds. Resource enhancement was one of the primary acquisition purposes, and the conceptual enhancement plans subsequently developed for the area included the levee breach that this project will implement. In spring 2006, the Conservancy passed through \$928,000 in USFWS NCWC funding for further acquisition, restoration and enhancement of the Arcata Baylands, including 30 acres of restoration in the Jacoby Creek estuary, downstream of the project area. The City began working with the USFWS Coastal Program to plan and design this project in 2011, and received a \$64,260 Coastal Program grant, which funded studies required for planning and environmental compliance, permit application fees, staff time, and enhancement work including invasive species removal and fence relocation to expand the riparian corridor. The City and the USFWS Coastal Program staff approached the Conservancy about applying to the USFWS NCWC program in 2015, and USFWS awarded a NCWC grant for project implementation in 2016. The City applied to the Conservancy for a Proposition 1 grant for the project in fall 2016.

The Conservancy has worked with the City on habitat restoration projects for many years, including efforts at nearby wetland/tidal areas to restore functionality to former tidal wetlands. These projects include:

- the design and construction of the AMWS and Butcher Slough in the late 1970s and early 1980s that comprise the City's renowned wastewater treatment system;
- acquisition of the Bayview property east of Highway 101, and adjacent to the Arcata Marsh project;
- acquisition of the Alto properties south of the Bayview property along Beith and Jacoby Creeks that, together with the Bayview property comprise the Arcata Baylands project area;
- restoration of Beith Creek and Gannon Slough on the Baylands property;
- construction of waterfowl ponds on the Alto properties; and

- restoration of the Jacoby Creek estuary downstream of the project area and tidal connectivity to Gannon Slough to provide increased fish passage.

PROJECT FINANCING

Coastal Conservancy	\$165,000
USFWS National Coastal Wetlands Conservation Grant	\$375,074
Project Total	\$540,074

The USFWS has awarded \$395,074 to the Conservancy for project implementation, contingent on compliance with the National Environmental Protection Act and other grant requirements. Approximately \$375,074 of the grant will support project implementation directly, while the remaining \$20,000 will pay for Conservancy staff costs. In addition to the capital costs of the project, in-kind contributions will be provided by the City, Humboldt State University (HSU) faculty, and Humboldt Baykeeper. The City is providing staff time for project management, planning, and design. HSU faculty is providing \$6,360 in staff time for education projects, such as student monitoring of the restoration project. Humboldt Baykeeper is providing \$7,300 in staff time to organize volunteer stewardship events.

The anticipated source of funding for this project is the fiscal year 2015 appropriation from the Water Quality, Supply, and Infrastructure Improvement Act of 2014 (Proposition 1, Water Code §§ 79700 et seq.). Funds appropriated to the Conservancy derive from Chapter 6 (commencing with § 79730) and may be used “for multi-benefit water quality, water supply, and watershed protection and restoration projects for the watersheds of the state” (Section 79731). Section 79732(a) states that these funds may be used to “protect and restore aquatic, wetland, and migratory bird ecosystems including fish and wildlife corridors,” (§ 79732(a)(4)) “collaborate with federal agencies in the protection of fish native to California,” (§ 79732(a)(7)) and “assist in the recovery of endangered, threatened, or migratory species by improving watershed health” (§ 79732(a)(12)). Consistent with these provisions, the project will restore aquatic and wetland ecosystems serving as fish and wildlife corridors for native Californian endangered Coho, in collaboration with the USFWS. Section 79732(a)(2) states that these funds may also be used to “implement watershed adaptation projects in order to reduce the impacts of climate change on California’s communities and ecosystems.” Consistent with this provision, the project will facilitate floodplain restoration that will reduce flooding of agricultural land in the project vicinity from storm events that are expected to increase in frequency with climate change. The project will also mitigate impacts to juvenile salmonid strandings, which may otherwise increase over time.

As required by Proposition 1, the proposed project provides multiple benefits. By restoring floodplain and riparian habitat in the Jacoby Creek watershed, the project will benefit depleted native fish populations and other aquatic and avian species that utilize riparian habitat. This project will also produce economic benefits by facilitating the recovery of Coho and steelhead, which support recreational fisheries. The project will also further climate change adaptation by reducing flooding of pastureland and provide for a more resilient creek channel.

In accordance with Section 79707(b) which requires agencies to prioritize “projects that leverage private, federal, or local funding or produce the greatest public benefit”, this project leverages federal contributions described in the “Project Summary” section, and local cash and in-kind contributions as discussed in the second paragraph below.

The project was reviewed and subsequently recommended for funding through a competitive grant process under the Conservancy’s *Proposition 1 Grant Program Guidelines* adopted in June 2015 (“Prop 1 Guidelines”). (See Section 79706(a)). The proposed project meets each of the evaluation criteria in the Prop 1 Guidelines as described in further detail in this “Project Financing” section, the “Project Summary” section and in the “Consistency with Conservancy’s Project Selection Criteria & Guidelines” section of this staff recommendation.

CONSISTENCY WITH CONSERVANCY’S ENABLING LEGISLATION:

The proposed project is undertaken pursuant to Chapter 5.5 of Division 21 of the Public Resources Code (Section 31220), as follows:

Pursuant to Section 31220(a) and 31220(b), the Conservancy may undertake projects to protect and restore coastal habitats section if the project “protects or restores fish and wildlife habitat within coastal and marine waters and coastal watersheds” or “restores coastal wetlands, riparian areas, floodplains, and other sensitive watershed lands, including watershed lands draining to sensitive coastal or marine areas.” Consistent with this section, the proposed project will result in the restoration of tidal wetlands and riparian habitat that provide habitat for fish and wildlife, including listed species, in Humboldt Bay.

The Conservancy has consulted with the State Water Resources Control Board in the development of the project to ensure consistency with Chapter 3 of Division 20.4 of the Public Resources Code regarding water quality. (See Exhibit 5, Project Letters). Consistent with Section 31220(c), the proposed project includes a monitoring and evaluation component, as reflected in the MMRP and is consistent with applicable and relevant Integrated Regional Water Management programs, local watershed management plans, and water quality control plans adopted by the state or regional water quality control boards, as discussed in the “Required Criteria” and “Consistency with Local Watershed Management Plan/State Water Quality Plan” sections below.

CONSISTENCY WITH CONSERVANCY’S 2013 STRATEGIC PLAN GOAL(S) & OBJECTIVE(S), AS REVISED JUNE 25, 2015:

Consistent with **Goal 5, Objective B** of the Conservancy’s 2013-2018 Strategic Plan, the proposed project will restore 29 acres of coastal habitat, specifically coastal wetlands and a stream corridor.

Consistent with **Goal 5, Objective E** of the Conservancy’s 2013-2018 Strategic Plan, the proposed project will implement a project to improve fish habitat by restoring off-channel high flow refugia and summer rearing habitat.

**CONSISTENCY WITH CONSERVANCY'S
PROJECT SELECTION CRITERIA & GUIDELINES:**

The proposed project is consistent with the Conservancy's Project Selection Criteria and Guidelines, last updated on October 2, 2014, in the following respects:

Required Criteria

1. **Promotion of the Conservancy's statutory programs and purposes:** See the "Consistency with Conservancy's Enabling Legislation" section above.
2. **Consistency with purposes of the funding source:** See the "Project Financing" section above.
3. **Promotion and implementation of state plans and policies:** By restoring and enhancing wetlands providing fish and wildlife habitat, the proposed project serves to promote and implement several state plans, including:

The project will help implement two priority actions identified in the 2014 *California Water Action Plan* (CWAP):

Action 4: Protect and Restore Important Ecosystems. The project will implement this action by restoring riparian and floodplain wetlands in Jacoby Creek, a coastal watershed, which will provide valuable fish and wildlife habitat.

Action 8: Increase Flood Protection. The CWAP calls for action to address flooding threats due to aging levee infrastructure and sea level rise due to climate change. The project will implement this action by planning a floodplain restoration project that will increase floodplain storage and channel conveyance on Jacoby Creek, reducing damage for pasturelands in the vicinity from flooding and storm damage that will increase with sea level rise.

The project will implement a Management Measure identified in the *California Nonpoint Source Pollution Control Program* prepared by the State Water Resources Control Board in 2000: MM6B- Restoration of Wetlands and Riparian Areas.

The project will further the following statewide goals and conservation strategies of the *California Wildlife Action Plan* (Wildlife Plan), prepared by the California Department of Fish and Wildlife in 2015:

Goal 3.3 (Hydrological Regime): Maintain or improve hydrological regimes vital for sustaining ecosystems (including riverine, lacustrine, and estuarine hydrodynamics). (pg. 4-3)

The project will further Goal 3.3. by restoring floodplain connectivity for Jacoby Creek in the project area. Floodplain connectivity will improve the creek's hydrologic regime by smoothing out the hydrograph and allowing for sediment deposition in the floodplain.

The project when implemented will help meet the following goals identified by the Wildlife Plan for North Coastal Riparian Forest and Woodland on the North Coast:

By 2025, acres of habitat (riparian) are increased by at least 5 percent from 2015 acres.

By 2025, acres where native species are dominant are increased by at least 5 percent from 2015 acres.

By 2025, acres/miles with desired channel pattern (natural floodplain) are increased by at least 5 percent from 2015 acres/miles.

By 2025, miles connected (to natural floodplain) are increased by at least 5 percent from 2015 miles. (pg. 5.1-37-38)

The project would further these goals by restoring 29 acres of floodplain wetlands and riparian habitat.

The project will help implement the following conservation strategies identified by the Wildlife Plan for anadromous salmonids statewide:

Enhance and protect key spawning and rearing habitat for each specific anadromous species; and

Restore marsh and riparian habitat to improve carrying capacity of anadromous fishes;

(pg. 6-19).

The project would further these strategies by restoring rearing habitat for Coho and chinook salmon and steelhead in Jacoby Creek and restoring 3.7 acres of riparian habitat which will benefit salmonids by providing winter refugia from high flows for juveniles.

The project would also support the following tasks identified in the *Recovery Strategy for California Coho Salmon*, prepared by CDFW in 2004:

- Eureka Plain Task 10: In cooperation with willing landowners, restore and maintain historical tidal areas, backwater channels and salt marsh.
 - Rangewide-Estuaries Task 2: Restore estuarine and associated wetland ecosystems.
4. **Support of the public:** The project is broadly supported, including by the Humboldt County Board of Supervisors, Assembly Member Jim Wood, and State Senator Mike McGuire (Exhibit 5).
 5. **Location:** The proposed project would be located within the coastal zone of Arcata.
 6. **Need:** The project would not occur without the Conservancy's funding and the USFWS funding that the Conservancy would subgrant through this authorization.
 7. **Greater-than-local interest:** The project will make a significant contribution to the recovery of multiple listed species, especially Coho salmon. Preliminary monitoring data show that target salmonid species (Coho salmon and steelhead trout) have been utilizing a fresh water pond approximately one mile upstream of the project area that was restored by the Jacoby Creek Land Trust and its partners, with over 115 juvenile Coho salmon and steelhead using the pond in February 2016. The consensus among local fisheries experts is that additional off channel fresh water habitats are essential in supporting and improving local salmonid populations. The proposed project would create substantially more off channel habitat where salinity levels are ideal for utilization by Coho salmon.

8. **Sea level rise vulnerability:** The project is designed to allow habitat migration upslope to accommodate sea level rise (SLR). The project will restore floodplain hydrologic connectivity by allowing overbank flows to return to Jacoby Creek, protecting both fish and adjacent agriculture lands during flood events. There are numerous facilities around Humboldt Bay threatened by SLR, and region-wide SLR adaptation planning is underway. This project will serve as an important demonstration of an adaptation approach that allows inland habitat migration as sea level rises.

Additional Criteria

9. **Urgency:** Restoration of the project area is urgently needed to assist in the recovery of threatened Coho salmon. Recovery actions for this species must be pursued in a timely manner in order to avert the danger of further population declines and extinction risk.
10. **Resolution of more than one issue:** The project will restore fish and wildlife habitat while simultaneously reducing the duration of flooding of surrounding pasturelands.
11. **Leverage:** See the “Project Financing” section above.
12. **Readiness:** Project design and permitting are well advanced and the proposed Conservancy Board authorization will provide all necessary funds for implementation. The project will be constructed in summer 2017 or 2018.
13. **Realization of prior Conservancy goals:** “See “Project History” above.”
14. **Return to Conservancy:** See the “Project Financing” section above.
15. **Cooperation:** The project will benefit from in-kind contributions from Humboldt State University (HSU) and Humboldt Baykeeper. HSU faculty will bring students to the project area to monitor the restoration process and outcome, and Humboldt Baykeeper will work with the City to organize volunteer stewardship days.
16. **Vulnerability from climate change impacts other than sea level rise:** The project will mitigate flooding that is likely to increase as a result of more frequent and severe storm events as a result of climate change.
17. **Minimization of greenhouse gas emissions:** The South Jacoby Creek Restoration project would provide some carbon sequestration through the expansion of riparian habitat vegetation planting. Current research shows that restored and functioning streams and riparian areas are sinks for carbon and nitrogen, as well as provide habitat for many species and plants². In addition, greenhouse gas emissions during construction will be minimized by reusing some excavated sediment onsite, and hauling excess sediment to the nearest appropriate reuse or disposal site.

² Lewis, D.J., M. Lennox, A. O’Geen, J. Creque, V. Eviner, S. Larson, J. Harper, M. Doran, and K.W. Tate. 2015. *Creek carbon: Mitigating greenhouse gas emissions through riparian restoration*. University of California Cooperative Extension in Marin County. Novato, California.

CONSISTENCY WITH LOCAL COASTAL PROGRAM POLICIES:

The proposed project is consistent with the relevant portions of the Coastal Land Use Element of the City of Arcata's General Plan, prepared in 1979 and last updated March 1987, which, along with the Coastal Land Use and Development Guide (maps and implementing ordinances), constitutes the City of Arcata's Local Coastal Program (LCP). The Coastal Commission certified the LCP on October 10, 1989.

Policy III-6 of the LCP recognizes the importance of riparian habitat by designating Riparian Buffer Zones, including the Jacoby Creek corridor (page 10). Consistent with this policy, the project will restore and enhance riparian habitat along Jacoby Creek.

Policy D-2 of the LCP calls for the development of a City stream maintenance program, which will provide for stream rehabilitation projects "designed to improve flow capacity, minimize channel erosion, and enhance riparian habitat" (Page D-11). Consistent with this policy, the City adopted the *Arcata Creeks and Wetlands Management Plan* (Creeks Plan) in 1991. The Creeks Plan includes the following policies, which are consistent with the proposed project:

Policy V-2 of the Creeks Plan states that "The City shall promote restoration of degraded riparian vegetation within Arcata's Creek Zones" (Page 7). Consistent with this policy, the project will restore riparian vegetation with the Jacoby Creek corridor.

Policy VI-1 of the Creeks Plan states, "The City shall promote restoration of creeks to a healthy condition for fish and wildlife." Consistent with this policy, the project will restore fish and wildlife habitat in the Jacoby Creek corridor.

CONSISTENCY WITH LOCAL WATERSHED MANAGEMENT PLAN/ STATE WATER QUALITY CONTROL PLAN:

The project is consistent with, and furthers the goals of, the *Humboldt Bay Management Plan* (HBMP), prepared in May 2007 by the Harbor District. The proposed project is consistent with HBMP Policy CAE-2: "CAE-2: Maintain, restore, and enhance aquatic ecosystem integrity" (HBMP, Pg. 201), in that it will restore coastal wetlands and riparian areas. The proposed project is consistent with Policy CAS-3: "Maintain and enhance habitat for sensitive species" (HBMP, p.204), in that it will lead to the restoration of habitat for Coho salmon.

The project is consistent with, and furthers the goals of, the Humboldt Bay Watershed Salmon and Steelhead Conservation (HBSSC) Plan, prepared by the Humboldt Bay Watershed Advisory Committee in March 2005. The HBSSC Plan highlights the importance of restoring floodplain connectivity and riparian habitat to the Bay's tributaries in supporting salmon populations, as well as diverse communities of fish and wildlife (pg. viii). The project will further the following Baywide goals of the HBSSC Plan (pg. ix):

- Maintain and restore floodplain processes that benefit salmonids.
- Establish access to suitable habitat for both adult and juvenile salmonids.
- Identify and restore degraded riparian habitat where feasible. (HBSSC Plan, p. ix).

The proposed project would further these goals by restoring floodplain connectivity, access to off-channel wetland habitat, and riparian habitat, as discussed above in the "Project Summary" section.

The proposed project is consistent with the Water Quality Control Plan for the North Coast (adopted by the Regional Water Quality Control Board North Coast Region in 1988 and last updated in 2007) in that it will enhance wildlife habitat, habitat for rare, threatened and endangered species, and estuarine habitat in Humboldt Bay. The Water Quality Control Plan for the North Coast designates wildlife habitat, rare, threatened, and endangered species habitat, and estuarine habitat as beneficial uses of Humboldt Bay (Water Quality Control Plan for the North Coast, Table 2-1, pp. 2-8 to 2-12).

COMPLIANCE WITH CEQA:

The City of Arcata, as lead agency under the California Environmental Quality Act (CEQA), prepared an Initial Study/Mitigated Negative Declaration (“IS/MND”) for the South Jacoby Creek Restoration Project (Exhibit 2). On June 7, 2017, the City adopted the IS/MND and a Mitigation Monitoring and Reporting Plan (“MMRP”) for the project.

The IS/MND analyzes the potential environmental effects of the proposed project. A Notice of Intent to Adopt Proposed Mitigated Negative Declaration and a Notice of Completion for the IS/MND was issued for agency and public review and sent to the State Clearinghouse on May 5, 2017 to announce the availability of the document and the 30-day review period. The Draft IS/MND was available online at www.cityofarcata.org, and copies of the IS/MND were made available at the Arcata Library and at Arcata City Hall. The City received one public comment letter on the Draft IS/MND from the Native American Heritage Commission.

The Final IS/MND consists of two volumes: Volume 1: the Initial Study Mitigated Negative Declaration, which includes the CEQA-required information and analysis, and Volume 2: the Mitigation Monitoring and Reporting Program. (See Exhibit 2).

Significant Effects Reduced To Less Than Significant Levels by Mitigation

The IS/MND provides a detailed analysis of potential environmental impacts and proposed mitigation measures to address the possible impacts associated with the project (See Exhibit 2, IS/MND). The IS/MND identified possible significant effects of the project in the areas of Biological Resources and Cultural Resources. Mitigation measures identified in the IS/MND will reduce all of these impacts to a less-than-significant level.

The potential adverse environmental impacts of the project result from the construction activities associated with the restoration and are summarized below, along with the mitigation measures that will reduce the impacts to a less-than-significant level.

Biological Resources

1. Impacts to special status fish species from increased turbidity or direct impact.

Mitigation: Construction will only occur between July 1st and October 31st when freshwater discharge into Jacoby Creek is at its lowest and when the ground surface is dry. When flowing water is present (i.e. during levee breach), a silt fence will be installed to isolate the work site. If necessary to isolate the area, a clean water diversion will be implemented as well. Prior to installing the flow bypass, the work area will be surveyed for fish species by a qualified biologist, and fish rescue will be employed if necessary. Silt fences will also be in place in the downstream end of the work area.

2. Impacts to breeding birds. *Mitigation:* If vegetation removal occurs during the avian nesting season, pre-construction surveys shall be conducted by a qualified biologist for all nesting bird

species, including: Willow Flycatcher, Black-capped Chickadee, Warbling Vireo, Yellow-breasted Chat, Yellow Warbler, Bank Swallow, Yellow-billed Cuckoo, Allen's Hummingbird, Black oystercatcher, Burrowing owl, Calliope Hummingbird, Peregrine Falcon, Olive-sided Flycatcher, and Purple finch. These surveys shall be conducted no more than 7 days prior to the commencement of work. The biologist shall inspect all potential nesting habitat for nests where project activities could result in disturbance, including areas of direct impact plus an area extending 100 feet from the perimeter of the project area. If the survey finds these species to be nesting, work shall be delayed until the end of the nesting of these species or the biologist shall monitor any active nests and construction shall commence after all young have fledged.

3. Impacts to Western Lily. *Mitigation:* Prior to construction, the project area will be surveyed by a qualified biologist for Western Lily. If any individuals are encountered, they will be flagged for avoidance before commencement of project activities. If relocation of any individuals is required to avoid impacts, the City will consult with CDFW and USFWS to develop a relocation protocol to ensure successful establishment.

4. Impacts to Semaphore Grass. *Mitigation:* A seasonally-appropriate survey will be conducted to assess potential impacts to semaphore grass (*Pleuropogon californicus*), a species of regional concern, resulting from project activities. If an expert consultation with CDFW and others determines that the overall population could be significantly affected by the project, the City will consult with CDFW to determine whether 1) seed-collection and propagation or 2) transplantation is the most appropriate protocol, and will implement the selected alternative.

5. Impacts to red-legged or foothill yellow-legged frogs and Northwestern pond turtles from construction in and adjacent to the levee breaching. To avoid potential impacts, work will be conducted during the dry season when minimal water is present. Work during the dry season also avoids the amphibian breeding season (generally December-March) in order to avoid impacts to egg masses. *Mitigation:* If any red-legged frogs, foothill yellow-legged frogs, or western pond turtles are encountered during construction activities, activities in the vicinity shall cease until appropriate corrective measures have been implemented or it has been determined that the species will not be harmed. This includes relocating these species to an appropriate habitat adjacent to the work area. Any sensitive reptile or amphibian species that are trapped, injured, or killed, shall be reported immediately to CDFW.

6. Impacts to wetlands. Approximately 0.61 acres of jurisdictional wetlands will be converted to uplands as a result of construction of the berm that will direct water and fish back into Jacoby Creek after overbank flooding. *Mitigation:* Wetland impacts will be mitigated on a minimum 1:1 replacement basis. Wetland mitigation monitoring will be conducted for a minimum of five years to ensure successful establishment. Specific monitoring and remediation procedures will be developed in coordination with permitting authorities to ensure that the plan meets regulatory agency requirements. Ultimately, the project will restore or enhance ~10 acres of wetlands that form part of a 29 acre wetland complex.

Cultural Resources

Inadvertent disturbance of cultural or paleontological resources. No cultural or paleontological resources were identified within the project boundary by an Archaeological Survey conducted for the project. However, cultural resources are known from the project vicinity, and there is a potential for impacts to during ground disturbing activities. These potential impacts will be reduced to a less

than significant level by the following mitigation measure. *Mitigation:* Tribal Heritage Preservation Officers (THPOs) for the Wiyot Tribe, the Bear River Band of the Rohnerville Rancheria, and the Blue Lake Rancheria will be notified no less than one week prior to construction of the freshwater capture channels. If the THPOs determine that it is necessary to prevent significant impacts to cultural resources, then cultural monitors shall be present during construction. Should an archaeological/paleontological resource be inadvertently discovered during ground-disturbing activities, work shall be immediately halted. The THPOs shall be immediately notified and a qualified archaeologist with local experience shall be retained (if deemed necessary by the THPOs) to consult with the City, the three THPOs, and other applicable regulatory agencies to employ best practices for assessing the significance of the find, developing and implementing a treatment plan, and reporting. Ground-disturbing project work at the find locality shall be suspended temporarily while City, the three THPOs, consulting archaeologist, and other applicable parties consult about appropriate treatment and disposition of the find. Ideally, a treatment plan will be developed within three working days of discovery notification. Where the project can be modified to avoid disturbing the find (e.g., through project redesign), this may be the preferred option. Ideally, the field phase of the treatment plan may be accomplished within five days after its approval, however, circumstances may require longer periods for data recovery. Should human remains be inadvertently discovered during ground-disturbing activities, work at the discovery locale shall be halted immediately, the City of Arcata Environmental Services Department, Humboldt County Coroner, Native American Heritage Commission (NAHC), and the relevant Native American representative(s) shall be notified, and the remains shall be treated in accordance with NAHC treatment and disposition requirements and relevant state law.

Mitigation Monitoring and Reporting Program

Under CEQA, whenever measures are required and adopted in order to mitigate or avoid the significant effects on the environment of an approved project, the agency must also prepare and adopt a Mitigation Monitoring or Reporting Program (MMRP) designed to ensure compliance with the required mitigation during project implementation (CEQA § 21081.6). An MMRP for this project has been prepared and is incorporated in the IS/MND, attached as Exhibit 2 to this staff recommendation.

Based on the foregoing independent review and on the extensive analysis contained in the IS/MND, staff recommends that the Conservancy finds that the project, as modified by incorporation of the mitigation measures identified in the IS/MND, will avoid, reduce, or mitigate all of the possible significant environmental effects of the project on these resource areas to a level that is less than significant. Based on the record as a whole, there is no substantial evidence that the implementation of the South Jacoby Creek Restoration Project, as mitigated, will have a significant effect on the environment.

Upon approval of the project, Conservancy staff will prepare and file a Notice of Determination.